Site Engineering Report

Gupta Residence
2572 Boston Post Road
Darien, Connecticut

Prepared for:

Rajat Gupta
2572 Boston Post Road
Darien, CT 06820

Date Prepared:

July, 2020

Prepared by:
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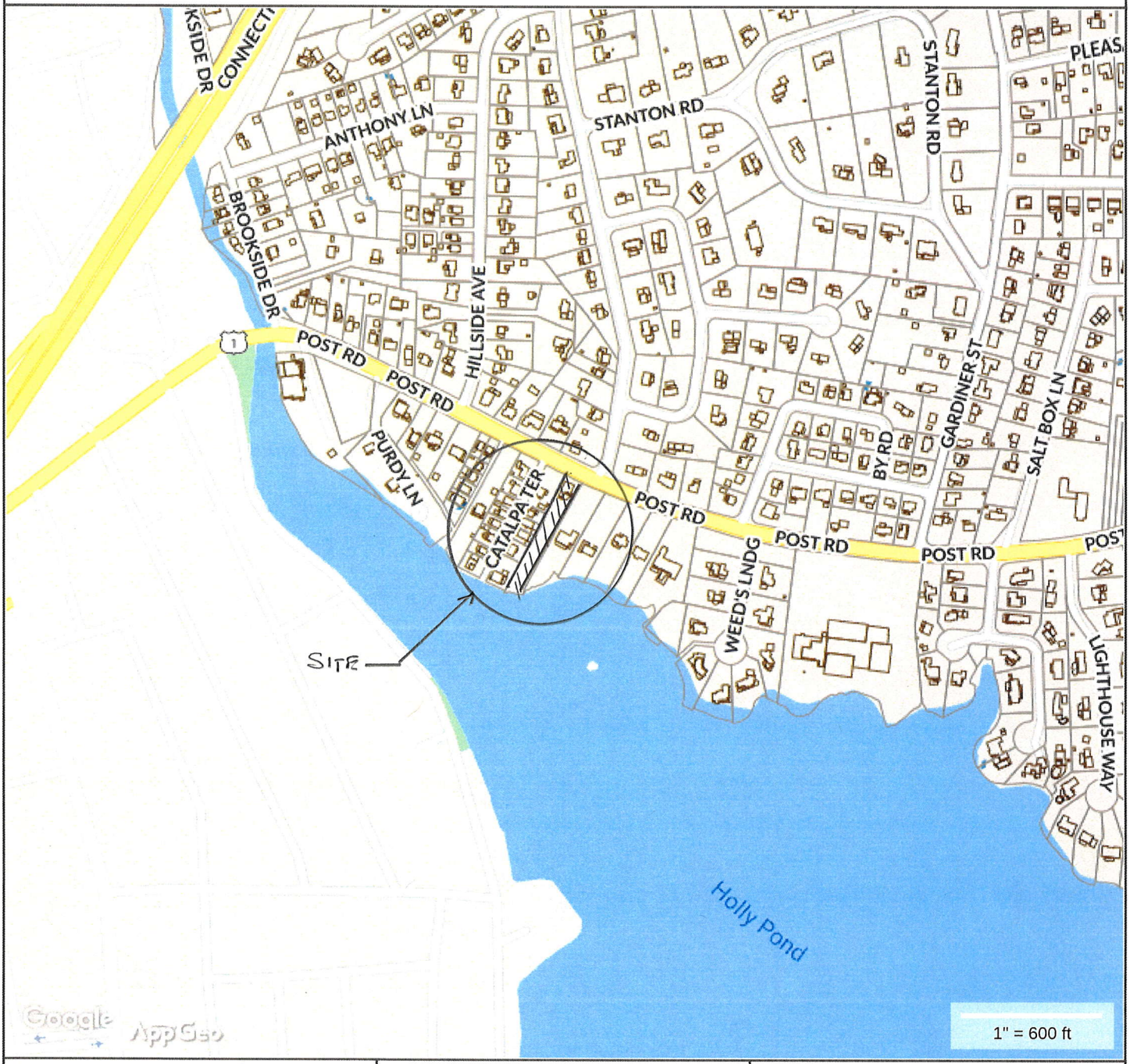
2572 Boston Post Road



MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Town of Darien, CT makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 8/1/2019
Data updated 8/1/2019

Introduction

This report has been prepared to present technical information in support of the application for the construction of a pool at the rear of the existing dwelling within an existing lawn area at 2572 Boston Post Road, located in the R-1/3 zone of Darien. The only other work proposed will be minor regrading related to the construction of the pool and the installation of landscape material.

Existing Site Conditions

The subject property is located at 2572 Boston Post Road. The property has a total lot area of .982 ± acres or 43,062± square feet. Currently there is an existing single family dwelling on the property that was built in 2006 according to the assessor's card. Access to this property is via asphalt driveway located to the north of the existing residence from Boston Post Road.

The property is bordered by residential properties on the east and west and Boston Post Road to the north and Holly Pond to the south.

The parcel has a mild slope from Boston Post Road to the front of the existing dwelling. The areas between the east and west side of the house and the property line slope moderately until one gets to the rear yard where the property slopes mildly towards Holly Pond. There is a stone retaining wall between the existing lawn area and the high tide line. There is a point that sticks out towards Holly Pond which consists of mature trees and is above the mean high water line and high tide line. The property consists of manicured lawn with mature landscaping throughout up to the retaining wall at the rear of the property.

Project Description

The proposal for this site consists of the construction of a pool, minor regrading and the installation of landscape material. Other work associated with this project will include the relocation of the existing subsurface stormwater management system.

Stormwater Management Facilities

Existing Site Runoff Characteristics

Currently the runoff from the house roof areas and driveway and a portion of the front lawn areas discharges into a subsurface stormwater management system located between the rear of the house and the existing retaining wall. All other runoff from the property sheet flows in a southern direction which ultimately flows to Holly Pond.

Developed Condition Site Runoff Characteristics

The proposed grading will not change the overall drainage pattern. Once the regrading is completed the drainage pattern will be the same. Due to the property being located at the lower reaches of the watershed and adjacent to Holly Pond, detention is not needed. We

are proposing to collect the water quality volume from the proposed pool patio area and discharge the same to the relocated subsurface stormwater management system. The water quality volume consists of the first inch of runoff. All other runoff from the rear portion of the house and lawn area will drain as it currently does either to the subsurface stormwater management system or sheet flow onto the ground and ultimately flow to Holly Pond.

Based on the design plan dated 2004 prepared by Rocco V. D'Andrea, Inc. Stamford, CT there are two subsurface stormwater management systems consisting of a set of Cultec Recharger 330 in the front yard and a set of Recharger 330 in the rear. The rear yard Rechargers will be relocated if the proposed pool encroaches onto the structures.

Per Section 880 of the Darien Zoning Regulations we have requested a waiver of the requirements of Section 880 for a detailed stormwater management plan and drainage plan. Please see the attached letter.

Site Utilities

Water Supply
The site is currently served by the existing municipal water supply located within Boston Post Road

Sanitary Sewer
The site is currently served by the existing sanitary sewer located within Boston Post Road.

Sedimentation & Erosion Control Narrative

Reference is made to the Sedimentation and Erosion Control Plan drawing, which, along with this text is included in the report, part of the Sedimentation and Erosion Control Plan for this project. All erosion controls are to follow the 2002 CT Guideline for Soil Erosion and Sediment Control.

Sedimentation and erosion controls for the lot will consist of silt fence placed on the down gradient side of all cut and fill areas and the installation of anti-tracking pads at the end of the machinery access from the existing driveway. Sedimentation and erosion controls shown on the plan are specific to this property.

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Appendix A:

Stormwater Management Operation and Maintenance Plan

DiVesta Civil Engineering Associates, Inc.

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Stormwater Management
Operation and Maintenance Plan
For
Gupta Residence
2572 Boston Post Road
Darien, Connecticut

July 17, 2020

The object of the stormwater management operation and maintenance plan is three fold; 1) is to collect the runoff from the driveway areas, roof areas and a portion of the lawn area in front of the house and convey the runoff into the subsurface bio-retention systems, one located in front of the house and the other at the rear of the house , 2) once the runoff has been collected and conveyed to the subsurface bio-retention systems the runoff will infiltrate into the surrounding soil or overflow to Holly Pond 3) the treatment system will detain the water quality volume of runoff from the roof area, driveway and a portion of the front lawn area before infiltrating into the surrounding soil before discharging into Holly Pond.

Maintenance Measures

1. Inspect the catch basins sumps annually for any accumulation of sediment. If there is any accumulated sediment it shall be removed by hand.
2. Inspect annually the roof drains to ensure that they are clear and free of buildup debris and that there are no blockages and that the pipes are free flowing.
3. Removal of any accumulated sediment will ensure that the bio-retention systems will function properly.

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Appendix B:

Water Quality Volume Calculations

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Water Quality Volume (WQV) Calculations

Gupta Residence
2572 Boston Post Road
Darien, Connecticut
Dated: 7/22/20

Compute the Water Quality Volume (WQV) (Design Point Easterly Property Line)
Source: Connecticut Stormwater Quality Manual 2004, Appendix B

Water Quality Volume (WQV) = ((1") (R) (A)) / 12
Where:
A = total area in square feet
R = 0.05 + 0.009 (I)
I = percent impervious cover

Proposed Pool Patio: Volume available = 59.9 ft³

A = 729 sf
I = 95%

R = 0.05 + 0.009 (95%)
R = 0.905

WQV = ((1") (R) (A)) / 12
WQV = ((1") (0.905) (729 sf)) / 12
WQV = 55 cu-ft (required)

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Appendix C:

Web Soils

DiVesta Civil Engineering Associates, Inc.

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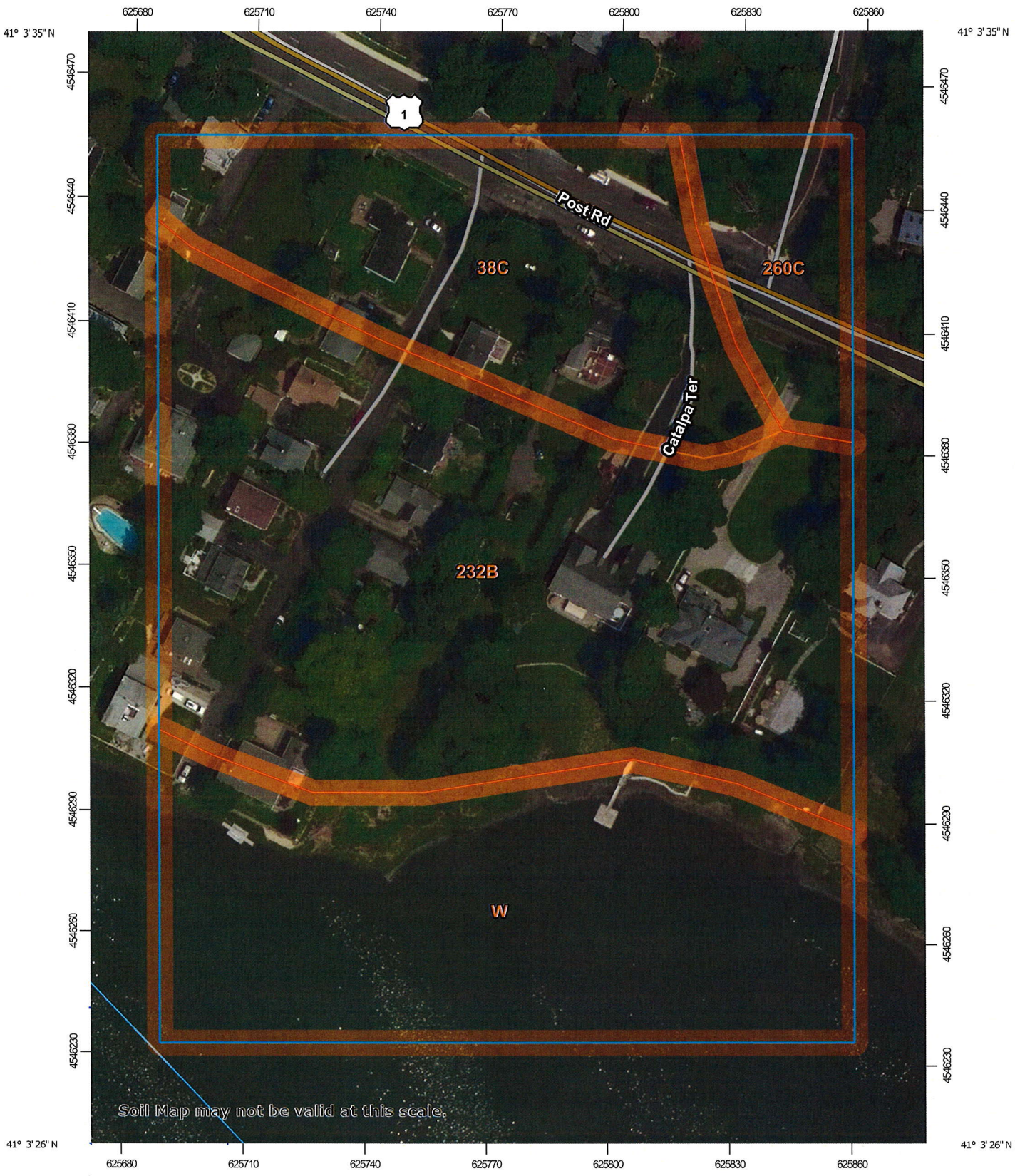
Soil Map—State of Connecticut
(2572 Boston Post Road)



Map Scale: 1:1,330 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut
Survey Area Data: Version 20, Jun 9, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 21, 2014—Aug 27, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
38C	Hinckley loamy sand, 3 to 15 percent slopes	1.9	20.0%
232B	Haven-Urban land complex, 0 to 8 percent slopes	4.2	44.6%
260C	Charlton-Urban land complex, 8 to 15 percent slopes	0.6	6.2%
W	Water	2.8	29.2%
Totals for Area of Interest		**9.5**	**100.0%**

State of Connecticut

232B—Haven-Urban land complex, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9lkl
Elevation: 0 to 1,200 feet
Mean annual precipitation: 43 to 56 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 140 to 185 days
Farmland classification: Not prime farmland

Map Unit Composition

Haven and similar soils: 40 percent
Urban land: 35 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Haven

Setting

Landform: Outwash plains, terraces
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Coarse-loamy eolian deposits over sandy and gravelly glaciofluvial deposits derived from granite and/or schist and/or gneiss

Typical profile

Ap - 0 to 7 inches: silt loam
Bw1 - 7 to 14 inches: silt loam
Bw2 - 14 to 20 inches: silt loam
BC - 20 to 24 inches: fine sandy loam
2C - 24 to 60 inches: stratified very gravelly sand to gravelly fine sand

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: B
Ecological site: Well Drained Outwash (F145XY009CT)
Hydric soil rating: No

Description of Urban Land

Typical profile

H - 0 to 6 inches: material

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: Unranked

Minor Components

Branford

Percent of map unit: 5 percent
Landform: Terraces, outwash plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Udorthents

Percent of map unit: 5 percent
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Agawam

Percent of map unit: 5 percent
Landform: Terraces, outwash plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Ninigret

Percent of map unit: 3 percent
Landform: Outwash plains, terraces
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Enfield

Percent of map unit: 3 percent
Landform: Terraces, outwash plains
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Tisbury

Percent of map unit: 2 percent
Landform: Terraces, outwash plains
Down-slope shape: Concave

Across-slope shape: Linear
Hydric soil rating: No

Raypol

Percent of map unit: 2 percent
Landform: Depressions, drainageways
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: State of Connecticut
Survey Area Data: Version 20, Jun 9, 2020